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<pre> graph LR subgraph ClientBox [] direction TB CP["The Client Program (15)"] WC["Web Crawler (14)"] CP -- 3 --> WC end MS["Managing System (11)"] WS["Web Server (16)"] D[(Data (13))] CP -- 4 --> MS MS -- 6 --> CP CP -- 7 --> MS MS -- 8 --> CP MS <--> 5 D WC -- 1 --> WS WS -- 2 --> WC </pre>		
<p>(57) Abstract</p> <p>The invention makes it possible for a person who is looking at a picture page via an open computer network, for instance Internet or an intranet, to communicate with other persons, who are looking at the same page. By the invention is provided an arrangement and a method that makes it possible for a visitor (20) to retrieve information from a server (21), and get possibility to communicate with others (22), who are retrieving "related" information. Information, which, for instance, is within the same speciality, has the same storing place, the same author, or the same publisher is, according to the invention, regarded as "related". The invention makes it possible for persons to meet in the virtual world and there get access to: information about, inclusive address to and picture of, other persons who are searching information within the same or related fields, possibility for direct communication, access to documents in common, or other objects or files. The invention is built up of a management system, client program and a database.</p>		

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PERSONAL COMMUNICATION ON COMPUTER NETWORKS

TECHNICAL FIELD

5 The present invention relates to personal communication with pictures over an open computer network. The invention makes it possible for a person who is looking at a picture page via the open network to see and communicate with other persons who are looking at the same page.

10

In spite of the fact that there are virtual meeting places on the Internet, such as chat rooms, there are needed special arrangements to make it possible for users to meet on the Internet. The here described invention offers
15 considerably increased possibilities for meetings between people by giving each web page possibility of being a potential meeting place. The invention creates virtual meeting places where the participants inter alia can exchange documents and execute a "conversation" by writing,
20 at the same time as they can see each other.

PRIOR ART

There are existing systems, which give users of Internet
25 possibilities to see and communicate with others who are visiting the same web pages. Earlier known systems, however, require that modifications be made on all concerned web pages by a specific HTML-code being applied to each web page. This results in that the communication
30 possibilities will be strongly connected to the web server, that is, the users can only see each other if they are visiting web pages of a web server where the same system to provide this communication facility is installed. A plurality of servers with the system installed can be
35 interconnected to cover a plurality of web servers, but to make it work globally, all web servers of the Internet

would have to install the same system. Consequently it will only function on a limited amount of web pages on the Internet.

5 TECHNICAL PROBLEM

Today there is a great number, millions, of users on the Internet. There exist certain possibilities for communication, but yet there are no generally applicable
10 methods to see the counterpart at the communication.

Certain web pages are adapted for direct communication with persons who are visiting just that page, so called chatting. Such solutions are connected to a separate web
15 page, so called chat page. Any generally available possibility to direct communication with others does not exist via the web pages. It is, for instance, not possible to start a chat from just any page, and there are needed certain tools for chatting.

20

Chatting via a chat page is anonymous since the counterpart is not possible to identify. Name and other information in connection with the chatting is voluntary information that can be presented during the chatting and there are small
25 possibilities to get a reliable identification. Neither there is any possibility to see the person with whom one is chatting.

A lot of Internet users are at the same time searching
30 information in the same field. Several Internet users are at the same time retrieving web pages from the same organisation or other group of to each other related web pages. The users, however, have no possibility to detect others who are visiting the same pages. It is not even
35 possible to know whether anybody else is visiting the same web page.

Customers who are visiting the web site of a company have today difficulties in getting into contact with and getting support, or answers to questions, from the company. The contact often has to be arranged by the company giving a
5 telephone number that the customer can call, or by the customer sending an e-mail. By that it is also difficult or impossible for a company to get into contact with persons who are visiting the web site of the company and to with personal contact contribute to one for all parties good
10 piece of business.

TECHNICAL SOLUTION

By the invention, an infrastructure is created which exist
15 parallel with, but separate from, an open computer network, for instance Internet. The invention by that can be utilised together with all web pages on the Internet.

According to the invention, information sites (in Internet)
20 are grouped into "worlds". A "world" is a multiple of web pages that persons with interests in common can be expected to visit. A "world" can for instance be constituted by web pages that are associated to the same server, deal with the same field of interest, or belong to the same organisation.
25 According to the invention, the "world" constitutes the base for creation of contact between the users on the open computer network.

The invention is built of a management system, client
30 program and a database. In the database, information sites (web pages) are grouped into "worlds", and users are registered with address and identity information. There is also possibility to store a picture file.

35 The client program, which is accessible to retrieve from the management system, includes necessary functions for

contact with the management system and for the communication possibilities with other users of the open computer network.

5 ADVANTAGES

By means of the here described invention, a person who visits a web page will find other persons who are visiting the same web page or "related" web pages. The invention
10 makes it possible that people can meet in the virtual world without needing specific fora, such as chat rooms. Prepared and not prepared meetings are possible on just any web page.

15 Client software that is necessary, in addition to browser, to utilise the invention, is loaded to the user terminal from a central storing place. There are no modifications required of the web pages that are associated, or of the web servers from which the web pages are loaded.

20 The invention functions as a chat application on the Internet, and makes it possible for people with interests in common, and who for that reason are visiting the same web page, to get into contact with each other.

25 When the invention is used on the intranet of a company, it will promote spontaneous contacts between colleagues. It will by that be an important aid for internal distribution of information and communication.

30 The invention can be applied on the web site of a company and there directly give visitors at the web site support from staff at the company. Support staff have possibility to see the visitors and to communicate directly and give
35 them advice and support and in other ways contribute to

that the visitors of the page will have the wanted information or contact.

In connection with electronic shopping via the website of a company, a user can be attended to by a seller who gives personal service and aid and who can guide the visitor at the web site of the company. The customers also can get assistance from a seller without need of calling a certain telephone number or write e-letter.

10

In computer aided co-operative applications (group programs), the invention can be used to show who are connected, and function as a support in the communication.

15 The invention can be used in connection with telephone conferences to show who are connected, and give the users easy facilities to share documents.

The invention makes it possible for people to meet in the virtual world, without need of specific fora, such as chat rooms. Prepared and not prepared meetings are possible on any web page. Spontaneous meetings will arise in the same way as in the real world. Authors, journalists and other publishers can be constantly present on a web page. The one who is visiting the page can see them and communicate with them and vice versa.

LIST OF FIGURES

30 Figure 1 shows the communication at establishing of personal communication.

Figure 2 shows an overview of the structure of the invention.

Figure 3 shows an example of how the meeting place can be shown on the client's place of work.

35

EXPLANATION OF TERMS

Webb	Function on the Internet (or on an intranet) that allows that one in an easy way can retrieve linked information in form of text, picture and sound.
Web page	The amount of information on a web site that one can access without need to go further via a link; often corresponds to the amount one can see on the screen at the same time, or by scrolling the picture.
Chat	Carry on a dialogue by writing, in real time, via Internet.
Chat room	Web page for chatting.
Node	Centre in a communication network. A node shall be addressable and recognised by the host computer.
World	Limited amount of "related" information sites, for instance web pages. Users who visit information sites within the same world are, according to the invention, brought together into one communicating group.
Internet	The international computer network that has the greatest spreading and that is based on TCP/IP, a standard for data communication.

- Internet address Comprehensive term for the different types of addresses that are used on the Internet: Domain address, e-mail address, IP-address and web address.
- 5 Intranet Internal computer network (for instance within an organisation), which utilises the same technology as Internet, but which is not accessible from the Internet.
- 10 IP-address Numerical Internet address. In order to utilise the address space optimally, Internet users are often allocated IP-address dynamically.
- 15

DETAILED DESCRIPTION

- 20 The description below refers to Figure 2 in the enclosed appendix of figures.

In an open computer network, for instance Internet, users are given possibility to get access to information that has
25 been stored on servers. Access means that the user only will have admission to the stored information. Any possibility for communication with other users who are visiting the same page does not normally exist.

- 30 According to the here described invention, such an arrangement is provided that a visitor (20), who retrieves information on a server via an open computer network (21) will have possibility to communicate with others (22), who are retrieving "related" information. Which information
35 that is regarded as "related" is decided by the one who manages said arrangement. "Related" information can, for

instance, be information stored at the same storing place, within the same speciality, with the same author, or with the same publisher. The arrangement is so arranged that no limitation be applied to the site of the visitors in the
5 open computer network, such as the visitor's address in the computer network. The arrangement neither implies any limitation of storing place of concerned information, such as identity, ownership, or address to server, in excess of reading rights and other restrictions of access in the open
10 network to said information.

By the invention is provided communication facilities for users/visitors (20) on the computer network (21) without need for them to buy special equipment, software or other
15 resources. Necessary resources can be provided by the one who manages the arrangement, in form of, among other things:

- 20 ◦ client programs/additions to programs (23) which can be loaded to the user's terminal;
- management systems (26), which manage the arrangement and which communicate with users;
- 25 ◦ database (25), which stores information about users and information regarding identification of said "related" information.

The client program completes the communication functions
30 that are utilised in the user's terminal for communication on the open computer network. The completion relates to functions for the data interchange with the management system, and for communication with other users on the open computer network.

In the database, information is stored about the users who are utilising the arrangement. Necessary information is brought to the database through the user, by which the user himself/herself is given possibility to control which
5 information that shall be stored. Examples of stored information about the user are:

- picture of the user;
- 10 ◦ identification information such as name, organisation etc.
- address information such as address to establish communication, telephone numbers, e-mail address etc.
- 15 ◦ biographical data.

Further there is stored in the database information to identify "related" information. This implies among other
20 things identification and grouping of information sites.

By the described arrangement, the person searching information is given support to establish communication with other persons with the same interest, searching
25 information, or others who are searching information within "related" fields. The arrangement also gives access to communication possibilities with said other users.

Said communication possibilities can include:
30

- information about which other persons that are searching information within the same field, or "related" fields;
- 35 ◦ pictures of said other persons;

- address information of said other persons;
- immediate direct communication, for instance written or oral communication, with said persons;
- 5 • publication of documents for said other persons;
- access with different rights for files and documents that have been made public for said other persons.

10

PREFERRED EMBODIMENT

The description below relates to Figure 1 and Figure 3 in
15 the appendix of drawings.

In a preferred embodiment, the invention is utilised on the Internet. A management system (11) controls the function by managing control logic (13) and constitutes storing place
20 from where the user can load his/her computer with the client program. By the client program being retrieved via Internet, no adaptation or preinstallation is required at the user's computer (12).

25 The client program (15) is started from the user's web crawler (14). This client program reads the Internet addresses that the user activates in the web crawler.

An address to a web page is indicated in the user's web
30 crawler (1) at which the web server where this web page is, returns the requested web page to the web crawler (2).

The client program (15) senses that a new web page has been requested (3) and sends a message (4) to the management
35 system (11). The message contains the Internet address to the retrieved web page.

The concept "world" is used to refer to persons who are looking at the same page or, if a multiple of pages are included in a world, the same group of pages. The management system looks up in a database which world that
5 is associated with this Internet address (5), and returns the identity for the associated world (world-ID) to the client (6). To the world is associated a lot of objects, such as users, documents and chat rooms. These objects are accessible to those who are visiting the same world, but
10 not for others.

If it turns out that the new web page is associated to another world than the one that is shown for the time being, the client program uses this new world-ID to get
15 access to the now current world (7).

The management system returns the documents and users that are associated with the looked up world (8), for presentation to the user. The client also changes chat room
20 to the room that is associated with current world, in order to make possible text communication between users who are in the same world.

Each user is registered in the management system with inter
25 alia the IP-address at which he/she is. This will facilitate communication between users and makes possible addressing also when dynamic IP-addresses are utilised.

Web pages are associated to worlds by that one indicates a
30 node in the web tree. All pages further down in the tree than the specified node is regarded as belonging to the same world. A plurality of nodes can belong to the same world. By web tree is meant the tree structure that is created by the domain hierarchy of the Internet, and the
35 file trees of the web servers.

EXAMPLES OF COMPONENTS

Chat pages (33)

- 5 Users within the same world can chat with each other by the chat function that is included in the client program.

Picture of users (31)

- 10 Users who have stored a picture file, together with identity information, are shown by picture to all who are visiting the same world.

Document exchange (32)

15

Documents in common can be located to the server so that everybody in an easy way can have access to the same document. Different rights of access to these documents in common can be allocated to the users.

20

The component is also useful for exchange of other files or objects.

Address exchange

25

- When the users have stored address information on the management server, this address information is accessible to visitors in the same world. On the management server is also stored the user's current IP-address to make chatting
30 possible.

The invention is not limited to the above described embodiments, but can in addition to that be subject to modifications within the frame of the following patent claims and the idea of invention.

PATENT CLAIMS

1. An arrangement at an open computer network (21),
c h a r a c t e r i s e d in that communication
5 possibilities are created between persons (20, 22) or
agents, who request access to the same information, or
to amounts of "related" information in form of, for
instance, the same storing place, the same speciality,
the same author, or the same publisher.
10
2. An arrangement as claimed in patent claim 1,
c h a r a c t e r i s e d in that said communication
possibilities are independent of the storing place,
owner, author, or publisher of said information, or
15 amount of information, and that communication
possibilities are created without need of special fora
or special meeting places.
3. An arrangement as claimed in any of the previous
20 patent claims, c h a r a c t e r i s e d in that said
communication possibilities include direct
communication.
4. An arrangement as claimed in patent claim 3,
25 c h a r a c t e r i s e d in that said direct
communication can be written or oral dialogue in real
time (33).
5. An arrangement as claimed in any of the previous

patent claims, characterised in that said communication possibilities consist of virtual meetings.

- 5 6. An arrangement as claimed in patent claim 5, characterised in that said communication possibilities include functions to make files accessible to all participants in said virtual meeting (32).
- 10 7. An arrangement as claimed in any of the previous patent claims, characterised in that said communication possibilities include distribution of address information to, and picture of, said persons (31), and address information and picture related to
- 15 said agents.
8. An arrangement as claimed in any of the previous patent claims, characterised in that said open computer network is Internet or other network,
- 20 for instance an intranet, which utilises the same technology as Internet, and that said access to information and amounts of information consist of visits to web page/pages.
- 25 9. An arrangement as claimed in patent claim 8, characterised in that said communication possibilities are created between visitors to the same web page, or to web page that is included in an identified amount of web pages.

10. An arrangement as claimed in patent claim 9,
c h a r a c t e r i s e d in that said identified
amounts of web pages address persons who have a common
interest, by the web pages within the same amount
5 being, for instance, at the same server, at the same
group of servers, dealing with the same speciality,
belonging to the same organisation, or having the same
publisher, author, or constructor.
- 10 11. An arrangement as claimed in any of the patent claims
8 to 10, c h a r a c t e r i s e d in that said
communication possibilities are allowed on just any
web page.
- 15 12. An arrangement as claimed in any of the patent claims
8 to 11, c h a r a c t e r i s e d in that the user's
current IP-address is utilised to establish
communication.
- 20 13. An arrangement as claimed in any of the patent claims
9 to 12, c h a r a c t e r i s e d in the following
parts:
- 25 ◦ client program/additions to program (23), which
 can be loaded to the user's terminal;
 - central management functions (26), which manage
 the arrangement and that communicate with users;
 - 30 ◦ a database (25), which stores information about
 users and information regarding appointment of
 said identified amounts of web pages.

14. An arrangement as claimed in any of the previous patent claims, c h a r a c t e r i s e d in that necessary resources for the user's terminal working place, in addition to standard applications to create access to information, can be loaded via the open computer network and be installed at the terminal working place.
- 10 15. An arrangement as claimed in any of the previous patent claims, c h a r a c t e r i s e d in that users can register the following information:
- 15 ◦ picture of the user;
 - identity information such as name and organizatorical affiliation etc.
 - 20 ◦ address information, such as address to establish communication, telephone numbers, e-mail address etc.
 - biographical data.
- 25 16. An arrangement as claimed in any of the patent claims 9 to 13, c h a r a c t e r i s e d in that said virtual meetings give possibility to:
- 30 ◦ Chatting.
 - Communication of files.
 - Management of files in common.

- Access rights to communicated files and files in common.
 - Access to address information of the participants in the meeting.
 - Showing of pictures of the participants of the meeting.
- 10 17. A method to create, in an open computer network, virtual meetings between persons or others playing a part, for instance agents, who have an interest in common, c h a r a c t e r i s e d in that said meetings are established without activating measures
- 15 needed to be taken by any of the participants in the meeting.
18. A method as claimed in patent claim 17, c h a r a c t e r i s e d in that said meetings are
- 20 established independent of the place of the participants of the meeting or address in the network.
19. A method as claimed in patent claim 17 or 18, c h a r a c t e r i s e d in that the participants of
- 25 said meeting are given information about the identities of other participants, for instance in form of name, organizatorical affiliation and stored picture or direct transmission of moving picture.
- 30 20. A method as claimed in any of the patent claims 17 to

19, characterised in that the participants of said meeting are given information about the address of other participants, for instance e-mail address and current IP-address.

5

21. A method as claimed in any of the patent claims 17 to 20, characterised in that the participants of said meeting can carry on conversation (33), for instance written or oral conversation.

10

22. A method as claimed in any of the patent claims 17 to 21, characterised in that files can be opened for the participants at said meeting.

15 23. A method as claimed in any of the patent claims 17 to 22, characterised in that participants of said meeting can make files and documents accessible to other participants at said meeting.

20 24. A method as claimed in any of the patent claims 17 to 23, characterised in that said open computer network is Internet or other network, for instance an intranet, which utilises the same technology as Internet.

25

25. A method as claimed in patent claim 24, characterised in that client software (23), which is required in addition to web crawler to utilise the invention, is loaded to the user terminal (20) from a management system (26).

30

26. A method as claimed in patent claim 24 or 25,
c h a r a c t e r i s e d in that said meetings:

- are prepared or not prepared;

5

- are established between visitors to web pages
that are located within the same "world", where a
"world" is an amount of web pages that persons
who have interests in common can be expected to
visit.

10

27. A method as claimed in patent claim 26,
c h a r a c t e r i s e d in that modifications of web
pages within the "world", or of web servers from where
said web pages are loaded to establish meetings, are
not needed.

15

28. A method as claimed in patent claim 26 or 27,
c h a r a c t e r i s e d in that web pages within the
same "world" are located to the same server (16), to
the same node, deal with the same speciality, have the
same authors, have the same publishers, or belong to
the same organisation.

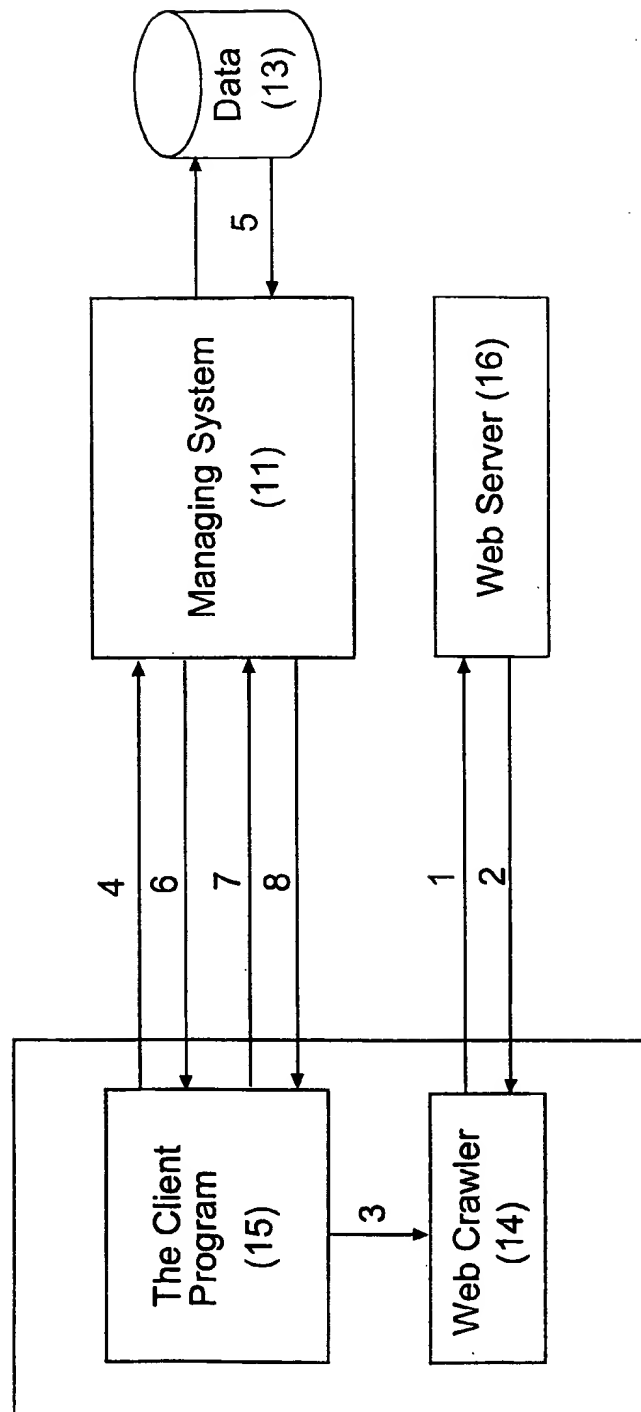
20

29. A method as claimed in any of the patent claims 24 to
28, c h a r a c t e r i s e d in that the support
staff, or selling staff, of a company have possibility
to see who are visiting the web site of the company
and to communicate directly with these visitors.

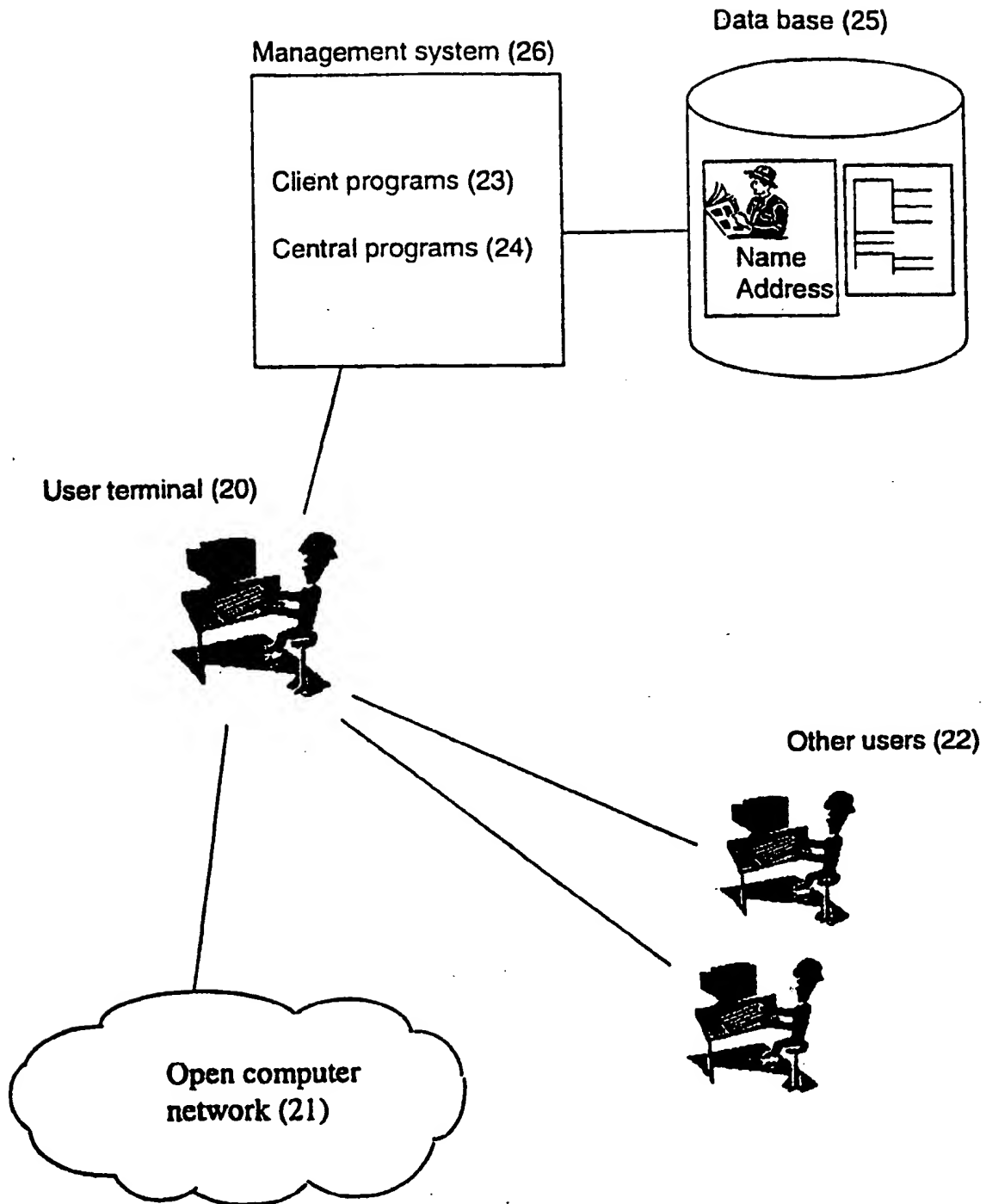
30

30. A method as claimed in any of the patent claims 24
to 29, c h a r a c t e r i s e d in that the current
IP-address of each participant of the meeting is
utilised to establish communication between the
5 participants of the meeting.

1/3

**Figure 1**

2/3

**Figure 2**

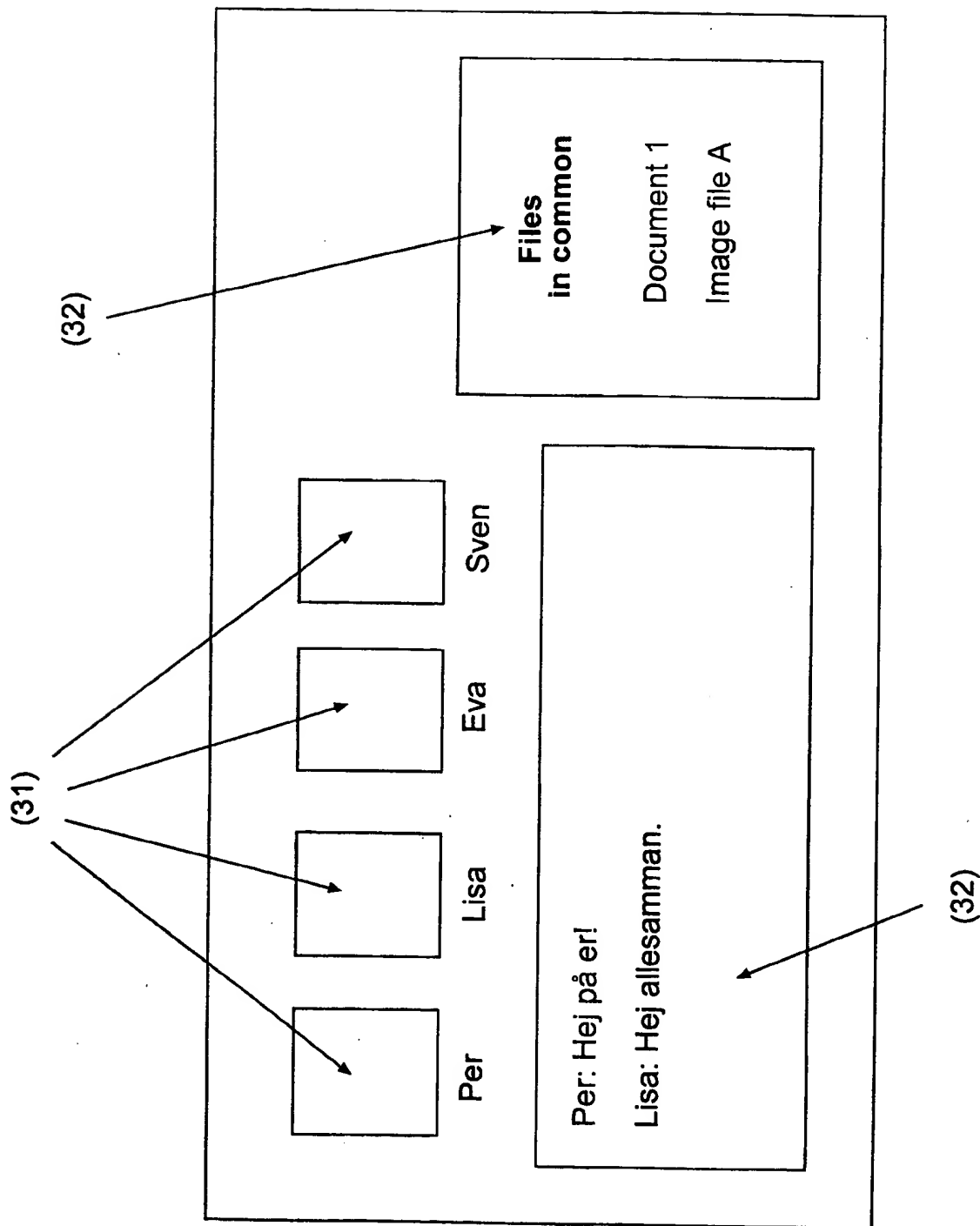


Figure 3

INTERNATIONAL SEARCH REPORT

International application No.

PCT/SE 00/00560

A. CLASSIFICATION OF SUBJECT MATTER

IPC7: G06F 17/30

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC7: G06F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

SE,DK,FI,NO classes as above

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5793365 A (JOHN TANG ET AL), 11 August 1998 (11.08.98), column 3, line 31 - column 4, line 28; column 8, line 57 - column 9, line 62, figure 5, abstract --	1-30
X	WO 99/03034 A1 (VOCALTEC COMMUNICATIONS LTD.), 21 January 1999 (21.01.99), page 3 - page 4, figures 3A,3B,3C, abstract -- -----	1-30

☐ Further documents are listed in the continuation of Box C.☒ See patent family annex.

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Date of the actual completion of the international search

17 July 2000

Date of mailing of the international search report

20 -07- 2000

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INTERNATIONAL SEARCH REPORT
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02/12/99

International application No.
PCT/SE 00/00560

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 5793365 A	11/08/98	NONE	
WO 99/03034 A1	21/01/99	NONE	